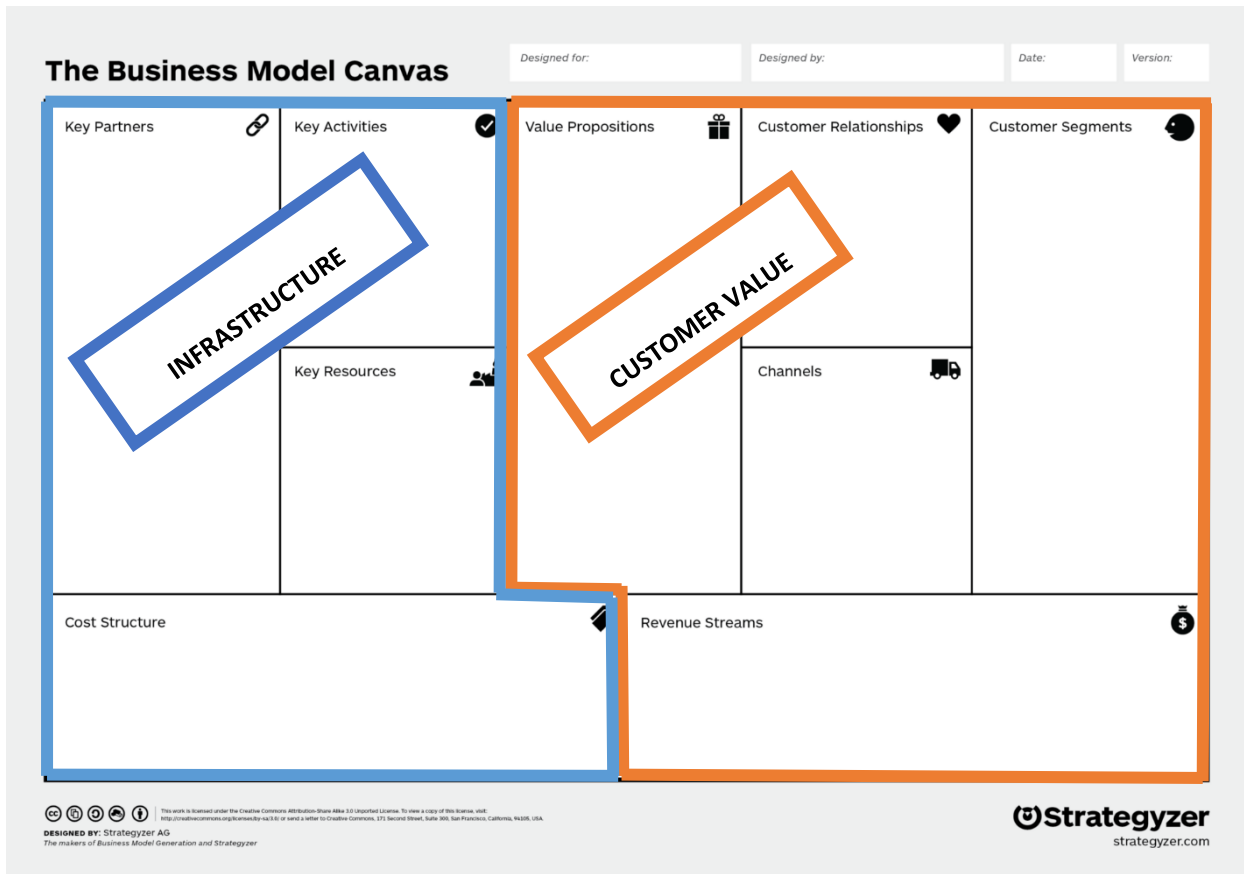


Business Model Canvas

The Business Model Canvas, as explained in Part Two of the Handbook, is a strategic management tool that helps entrepreneurs to visualize all the building blocks of a business as individual segments. The Canvas is a free, downloadable [template](#) available on the internet, but is also provided as a PDF on the Alliance's [website](#). In its most basic form, it is recommended that a company print out the canvas and collaboratively brainstorm and discuss the inputs for each component with their teams and partners. The template categorizes the processes and internal activities of a business into nine components, or building blocks. Each block defines a very specific part of a business. It can be used to define how each component of a business functions and easily identify where potential weaknesses, gaps and strengths are in order to anticipate them and take action.



The first step to using the Canvas is to decide how to frame the discussion. Will the template be used to discuss the development of a new business model, better understanding an existing model, expanding the existing business, or a comparison between an old and new model?

Sets of questions [have been developed](#) by practitioners of this method to help businesses frame the discussion while using the canvas. The left side of the canvas represents the infrastructure and operations needed to support and run a business (outlined in blue). The right side of the canvas represents what the customers see and interact with (outlined in orange).

1. Key partners
 - a. Who are your key partners/suppliers?
 - b. What are the motivations for the partnerships?
 - c. What partners will help you achieve your key activities? How can you leverage their expertise?
 - d. What activities will they perform and when?
2. Key activities
 - a. What key activities does your value proposition require?

- b. What activities are important the most in distribution channels, customer relationships, revenue stream...?
 - c. What activities do you need to excel in, i.e. strong marketing, innovative design, high-quality services or another area?
- 3. Value Proposition
 - a. What core value do you deliver to the customer?
 - b. Which customer needs are you satisfying?
 - c. What problem(s) are you trying to solve for them?
 - d. Are you giving them a product or a service?
- 4. Customer Relationship
 - a. What relationship does the target customer expects you to establish?
 - b. How can you integrate that into your business in terms of cost and format?
 - c. Do you have a strong customer service staff or customer incentive programs?
 - d. How do you get, keep, and grow customers?
- 5. Customer Segment
 - a. Which types of segments are you creating values for?
 - b. Who is your most important customer?
 - c. What are their characteristics? (geographic, social, demographic, etc.)
- 6. Key Resource
 - a. What key resources does your value proposition require? (capital, physical plants, machines, patents, customers lists, hardware designers, etc.)
 - b. What resources are the most important in distribution channels, customer relationships, revenue stream...?
 - c. Do you need technical skills, physical labor, physical stores, etc?
- 7. Distribution Channel
 - a. How does your product/service get from your company to the customers?
 - b. Through which channels that your customers want to be reached?
 - c. Which channels work best? How much do they cost? How can they be integrated into your and your customers' routines?
 - d. Will you have a physical presence, i.e. a retail store?
- 8. Cost Structure
 - a. What are the costs in your business?
 - b. Which key resources/ activities are most expensive?
 - c. What key activities are the most expensive? What are fixed and what are variable?
- 9. Revenue Stream
 - a. How do you make your money from product/service being sold to your customer segments?
 - b. What value is the customer paying for?
 - c. What and how do they pay? How would they prefer to pay?
 - d. How much does every revenue stream contribute to the overall revenues?

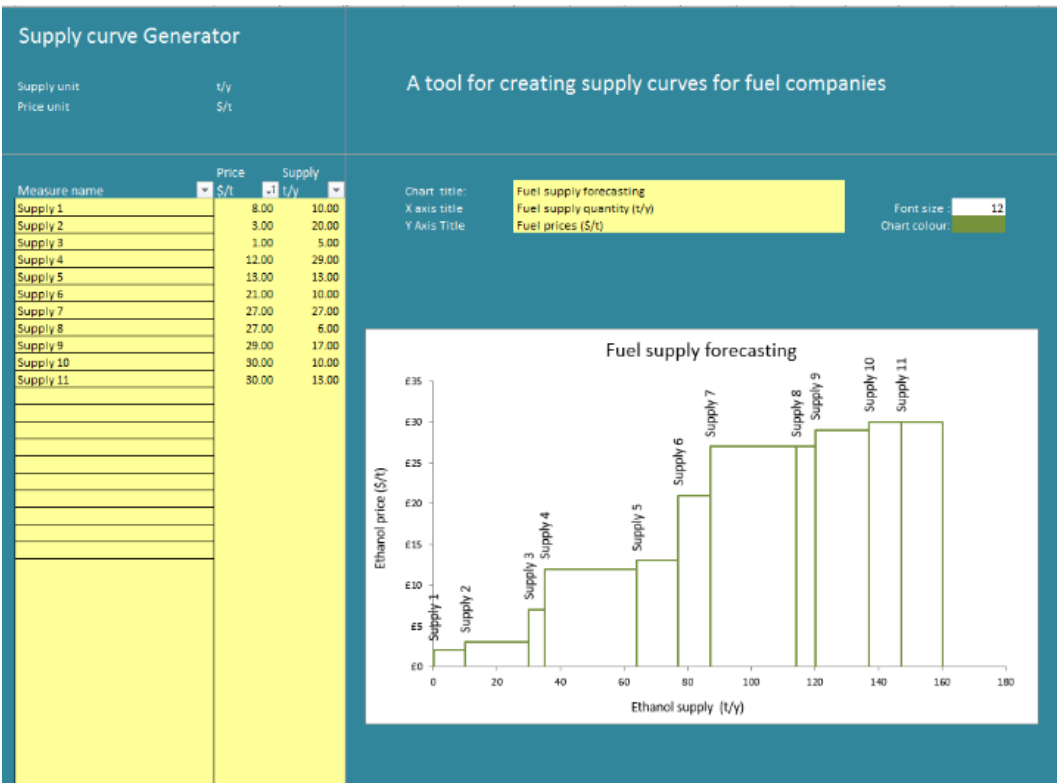
The process of answering these questions can be used to better understand how a company creates and delivers value in its current model, how it can make a future idea for the business model more concrete, or determine ways to create new ideas and innovations. While understanding the individual components is key, this method is meant to help a business grasp how the nine building blocks relate to each other, the different ways these relationships can be changed to increase efficiency or effectiveness, and look for opportunities to strengthen, grow, and innovate.

APPENDIX B

Supply Curve Tool

As discussed in Part Three, there are a variety of tools and methods that can be used by companies to assess supply. One such tool is a supply curve, which is a basic economic tool used to express and predict the price of a resource at a given quantity of demand. On a fuel supply curve in the context of this work, each possible source of biomass is associated with an available quantity and a cost (either market price or a complete cost that includes all costs up to factory processing). The Excel version was created for this work to be easily used by fuel enterprises in the sector. Table 3.1 in the handbook outlines the overall steps needed to use a supply curve methodology.

A screenshot of the tool can be seen below. In the Excel spreadsheet, each biomass supply source that a business identifies as a potential option should be entered as a row in the spreadsheet. Then the supply capacity (tons/year) and the associated price (USD/ton) should be entered in the appropriate columns. This information can often be found by consulting publicly available national statistical databases or through direct contact with suppliers. There will always be uncertainty as quantities and prices of biomass fluctuate with agricultural and forestry practices and market conditions. A good practice is to identify a range of possible values for each resource so that one can assess “worst case,” “most likely,” and “best case” scenarios. To be able to compare different sources in the same supply curve, it will also be important to convert to consistent units. Once all the supply sources are integrated into the table, a user can click on the graph to update it and produce the desired supply curve.



The tool is meant to provide entrepreneurs with a quick, insightful snapshot to better understand supply options and inform decisions about whether their available feedstock will be sufficient for medium and long-term scale up plans.

APPENDIX C

Market Replication Tool

The Excel Market Replication Tool was designed around the concept of a bartering model for wood supply and then tailored to the business model of Global Alliance grantee, Dazin, as discussed in Part Four of the Handbook.

This Appendix highlights how the tool is structured and what information needs to be gathered by an entrepreneur to use it to assess the economic viability of a market of interest. The tool is an interactive spreadsheet with 8 tabs; an introduction tab, assumptions tab, three calculation summary tabs, and three results tabs. A screenshot of one of the tabs of the tool is provided below.

Model Parameters		Unit	Value
Model start	1-Jan		2018
Commissioning	1-Jan		2018
End of operations	1-Jan		2040
Currency			Rs
Conversion rate to \$: 1 Rs =	US\$		0.0153981
Length of each period (in years)			1

Name or category	Unit	Single value	Yearly value	2018	2019	2020	2021	2022
Start of operation		(1.0)		1.0	0.0	0.0	0.0	0.0
Period of operation		(1.0)		1.0	1.0	1.0	1.0	1.0
End of operation		(1.0)		0.0	0.0	0.0	0.0	0.0

Supply		Unit	Value
Supply market share			
Supply n°1: rural households			
Type of supply			
Number of suppliers per year			
Amount of raw material supplied by supplier	kg/year/supplier		
Price paid for the supply	Rs/kg		
Average distance from production facility to suppliers	km/supplier journey		
Supply n°2: saw mill			
Type of supply			
Number of suppliers per year			
Amount of raw material supplied by supplier	kg/year/supplier		
Price paid for the supply	Rs/kg		
Average distance from production facility to suppliers	km/supplier journey		
Supply n°3: forestry waste collectors			
Type of supply			
Number of suppliers per year			
Amount of raw material supplied by supplier	kg/year/supplier		
Price paid for the supply	Rs/kg		
Average distance from production facility to suppliers	km/supplier journey		
Supply n°4: XXXX			
Type of supply			
Number of suppliers per year			
Amount of raw material supplied by supplier	kg/year/supplier		

- **Instructions tab:** This tab provides a general introduction to the tool and the basic steps to utilize it. Throughout the different tabs, the cells that require user input data are colored green.
- **Assumptions tab** (green tab in the spreadsheet): The potential user should fill in different parameters with the best available data. Simulations with different sets of assumptions will then confirm the impact of each parameter on the profitability of the company. The data is detailed for the different customer segments in the supply and distribution sections.
- **Calculation Summary tabs** (blue in the spreadsheet): This comprises of three tabs summarizing all the calculations related to investments, operating costs, and sales:
 1. The Investment Costs tab contains all the necessary calculations to summarize the total investment costs. In particular, it takes into account all investments related to facilities, equipment and investment costs of stoves.

2. The Operational Costs tab contains all the necessary calculations to reach the total operational costs. It encompasses all costs related to raw materials, production, supply and distribution, packaging, stove maintenance, sales and marketing, and overhead.
3. The Sales tab contains all the calculations necessary to reach the total income from sales of the solution. It includes revenue from stove deposits and fuel sales.

► **Results tabs** (blue and orange tabs): This part has three sections and automatically gathers the results from the company's perspective and from customers' perspective:

1. The Company Perspective tab shows the overall results in terms of sales, investments and operational costs. With these three parts computed, it is possible to calculate company cash flows and breakeven time which provides insights on the company's economic viability.
2. The Customer Perspective provides results for the customer in terms of the economic benefits to switch from the old to the new cooking solution and the detailed analysis of the different customer segments.
3. The Dashboard tab provides graphs to supplement the analysis.

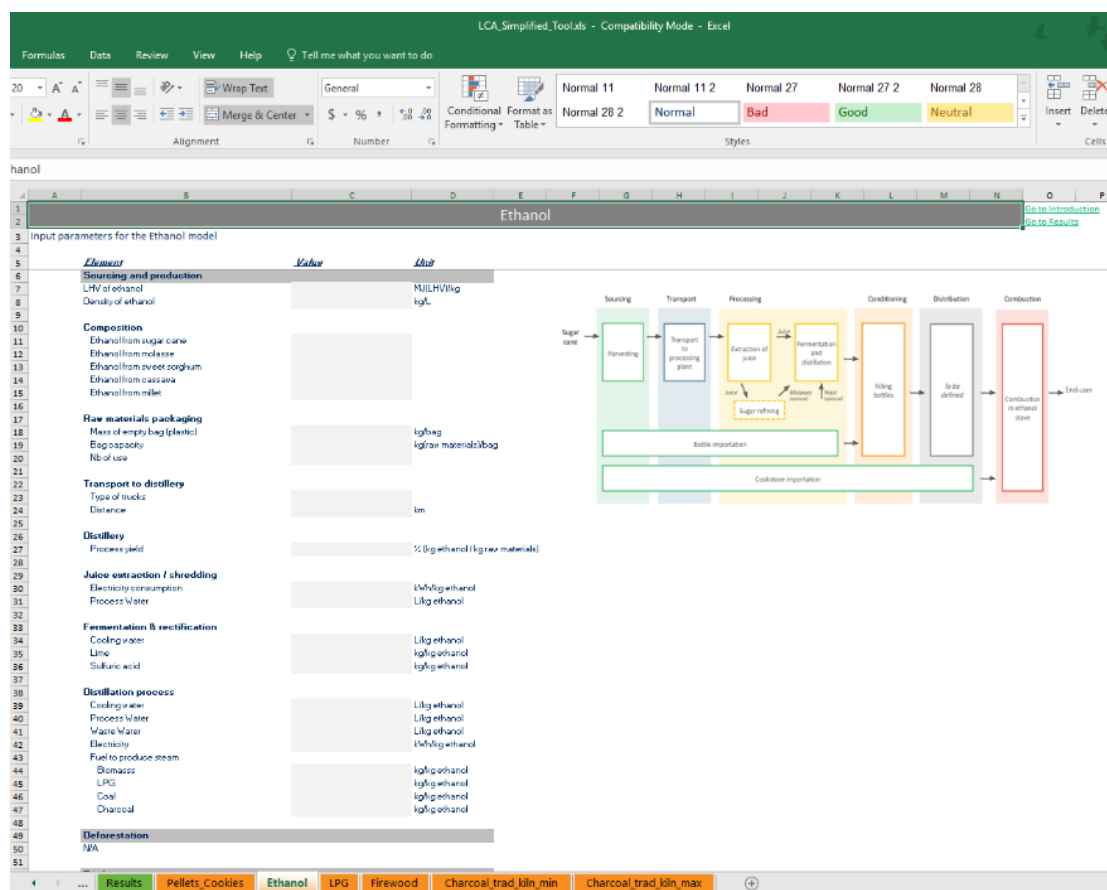
APPENDIX D

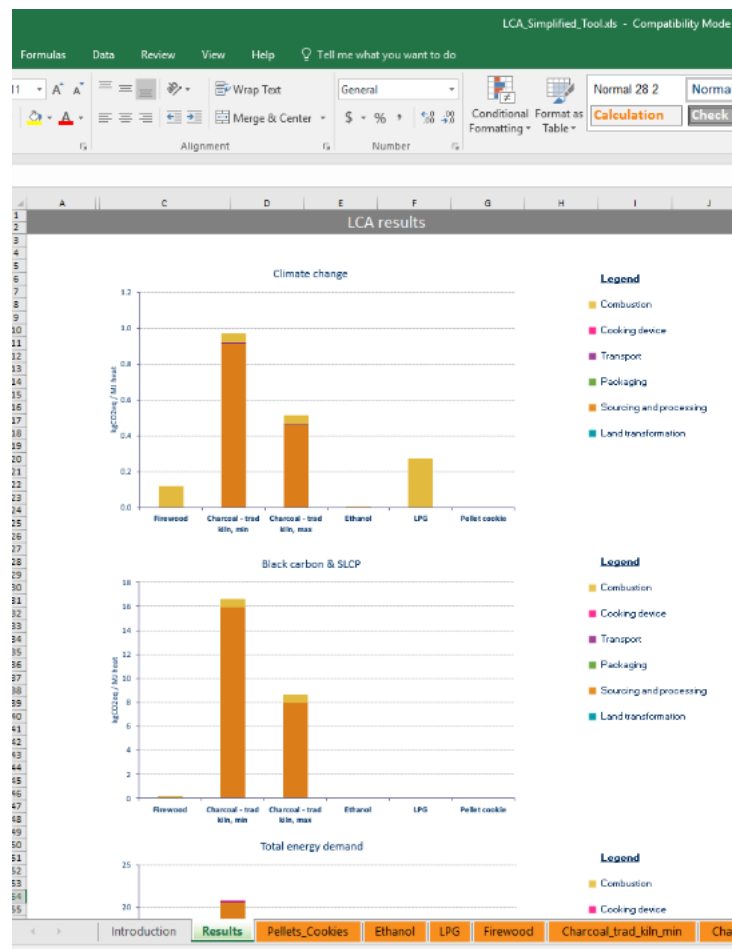
Life Cycle Analysis Tool

As highlighted in Part Five, life cycle analysis (LCA) has emerged as a valuable decision-support tool as they systematically quantify and evaluate the potential environmental impacts that are caused by a product or process along each phase of product development. By examining the entire life cycle of cooking fuels, it gives a complete picture of the individual and total environmental impacts beyond combustion. A generalized, or “light” LCA tool was developed for this work with a specific focus on densified biomass (pellet or fuel cookies) and ethanol. However, it is important to note that rigorous LCAs, whose results are meant to be externally disseminated, require technical expertise, software, and adherence to the International Organization of Standardization (ISO) regulations. The simplified version developed for this consultancy can help a company get a general sense of a product’s potential environmental impacts and be used for internal planning and decision-making.

To build the tool around these two fuel types, the life cycle stages for each were modeled, as were the stages for alternative traditional and modern fuels for comparison. Each model’s general life cycle stages can be seen in the figures in the orange tabs in the Excel spreadsheet. In the Tool, other companies with comparable models can enter the relevant information about their fuels in the appropriate tabs and the green “Results” tab will provide a simple analysis of the environmental impacts from each of the processes along the value chain. Companies will need to collect local data from field interviews or available literature. The data will be both on fuel production processes (efficiency of the process, additives such as water or chemicals, etc.) and the equipment used by the company and customers to use the fuel (material for the stoves, transportation modes, bags, etc.).

Examples screenshots of an input tab and the Results tab are provided below.





Understanding the positive and negative environmental impacts of a business' processes or products allows them to identify opportunities for economic and efficiency improvement, as well as avoid long-term negative environmental effects.

